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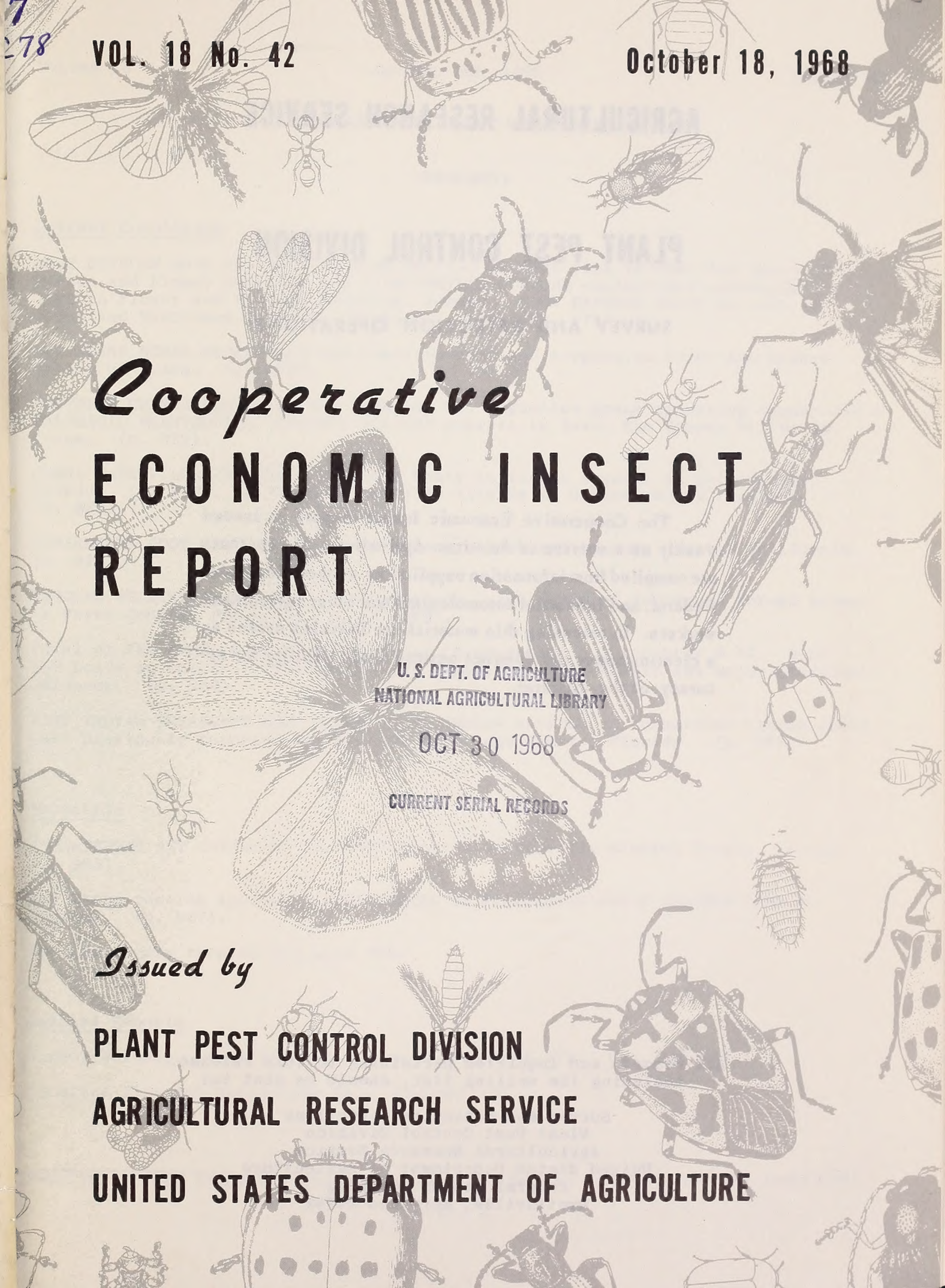
VOL. 18 No. 42

October 18, 1968



Cooperative ECONOMIC INSECT REPORT

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PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Volume 18 October 18, 1968 Number 42

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

ARMY CUTWORM moth collections much heavier in 1968 than in last few years in Barton and Finney Counties and PALE WESTERN CUTWORM collections extremely high in Finney and Stevens Counties, Kansas. CORN EARWORM heavy in corn in Wayne and Washtenaw Counties, Michigan. (pp. 977, 978).

SUGARCANE BORER widespread and heavy on corn and sorghum in lower Rio Grande Valley of Texas. (p. 978).

SOUTHERN CHINCH BUG heavy and damaging St. Augustine grass in Brazos County and a DELPHACID PLANTHOPPER severely stunted grasses in lower Rio Grande Valley of Texas. (p. 979).

ZEBRA CATERPILLAR larval migrations heavy in forage legumes in Lyon County, Nevada. (p. 979). LYGUS BUGS heavy in alfalfa in Graham County, Arizona. (p. 980).

STRAWBERRY ROOT APHID heavy on strawberry plantings in Napa County, California. (p. 984).

SADDLED PROMINENT defoliation reported on 1,500 acres of deciduous forest trees in Wayne County, Pennsylvania. (p. 985).

Total of 796 SCREW-WORM cases reported in southwest U.S. October 6-12. HORN FLY heavy on cattle in Kinney County, Texas, and in Woodward and Major Counties, Oklahoma. (p. 986).

WEST INDIAN SUGARCANE ROOT BORER adult damage serious on commercial citrus grove near previously reported infestation in Orange County, Florida. (p. 987).

Detection

A CARPENTER ANT collected at naval ammunition depot in Mineral County, Nevada. (p. 983).

New State records include a LADY BEETLE in Washington and a MYMARID WASP in Indiana. (p. 987).

For new county records see page 983.

Special Reports

Survey Methods. Selected References 1956. Part XII. (pp. 990-996).

Imported Fire Ant Quarantine Map. Centerfold.

Reports in this issue are for week ending October 11 unless otherwise indicated.

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WEATHER BUREAU'S 30-DAY OUTLOOK

MID-OCTOBER TO MID-NOVEMBER 1968

The Weather Bureau's 30-day outlook calls for temperatures to average below seasonal normals over the southern portion of the Nation lying between the Appalachians and the southern Plateau region. Above normal averages are expected along the Atlantic seaboard and in the Great Lakes region. In unspecified areas, near normal temperatures are indicated although with large intramonthly fluctuations. Precipitation is expected to exceed normal over most of the eastern half of the Nation and also over the Pacific Northwest. Subnormal amounts are indicated for the far southwestern and western portions of the northern Plains. Elsewhere, near normal precipitation is indicated.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price $5.00 a year.

WEATHER OF THE WEEK ENDING OCTOBER 14

HIGHLIGHTS: Typical autumn weather. Cold Canadian air brought freezing temperatures to the intermountain region and most of the Rockies as gulf air struggles to continue the mild weather over mid-America. A Pacific storm brought the first general rains to California and snows to the western mountains.

PRECIPITATION: Light snow fell in the northern and central Rockies early in the week. Much of the snow melted as it fell but by 8 a.m. Tuesday, 1 inch had accumulated at Laramie, Wyoming. Snow fell Tuesday afternoon at Denver and Colorado Springs, Colorado. More cool, wet weather moved into the Pacific Northwest over the weekend. Substantial rains fell along the Washington and Oregon coast with snow above 4,000 feet. The wet weather spread southward bringing the first general rains of the season to California with snow above 8,000 feet. By Sunday the storm extended across the northern Rockies and was leaving a blanket of snow in the higher elevations. Heavy thunderstorms occurred from eastern Texas to the middle Mississippi River Valley Tuesday afternoon and early Wednesday. A few twisters occurred in Texas and the torrential rains caused a quick rise in the streams in Oklahoma and Missouri. Rains in the Southeast came early in the week with South Carolina benefiting from the first general precipitation in 2 months. Light rain fell in the Great Lakes region and the Ohio River Valley at midweek. New England received general rains on the 7th with additional showers on the 10th

Weather of the week continued on page 988.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

GREENBUG (Schizaphis graminum) - TEXAS - Found in 26 panhandle counties surveyed September 25 to October 9, 1968. Populations generally one per linear foot of planted row or square foot of volunteer wheat, or less. Ranged 1-5 per foot in Deaf Smith, Castro, Briscoe, and Donley Counties, 0-10 per foot in Swisher, Floyd, and Randall Counties. None found on small wheat. S. graminum not found on grain sorghum although this host still green. Few found on western wheatgrass. Hippodamia convergens generally light; decreased greatly past month. Flea beetles present in all fields surveyed. (Daniels). OKLAHOMA - Averaged 5 per row foot in field of volunteer wheat in Tillman County; negative in 2 other fields. Very light in wheat in eastern half of State. (Okla. Coop. Sur.). KANSAS - Trace to light, 1-25 per row foot, in all wheat checked in Thomas, Wallace, Wichita, Scott, Kearney, and Finney Counties. Heaviest in Wallace County; no damage noted. (Simpson). NEBRASKA - Light, ranged 3-7 per row foot, in 2 Lancaster County wheatfields. (Keith). SOUTH DAKOTA - Damage serious on 30-acre field of winter wheat near Ottumwa, Haakon County. Lady beetle adults and pupae in field. Controls recommended. (Peterson).

ARMY CUTWORM (Chorizagrotis auxiliaris) - KANSAS - Moths much heavier this year at Garden City, Finney County, and Great Bend, Barton County, than in last few years. (Simpson). TEXAS - Heavy damage by probably this species on turf of local golf course at Fort Stockton, Pecos County. (Neeb).

CORN EARWORM (Heliothis zea) - TEXAS - Infestations ranged 10-40 percent in 6 fields of field or sweet corn in 6 panhandle counties September 25 to October 7. (Daniels). ARKANSAS - Larvae light and feeding on immature sunflower seeds in Jackson County; 2 per head highest count; 2.5-3.0 percent of heads infested. Some plants in late-bloom stage. (Boyer, Oct. 4). NEBRASKA - Few larvae remain in corn in Cuming County. (Hill, Keith). Larvae averaged 1-2 per 60 sweeps on alfalfa in Lancaster County. (Keith). MICHIGAN - Heavy in many cornfields in Wayne and Washtenaw Counties; mostly limited to green late-planted fields. (Janes, Oct. 8).

CORN LEAF APHID (Rhopalosiphum maidis) - WISCONSIN - Still evident on late green corn in southern counties. (Wis. Ins. Sur.). MARYLAND - Light on 100 acres of sorghum near Benedict, Charles County, and on 50 acres of sorghum near Wagners Crossroads, Washington County; feeding continues near Benedict. (U. Md., Ent. Dept.).

POTATO LEAFHOPPER (Empoasca fabae) - WISCONSIN - Nymphs averaged 25 per sweep in few alfalfa fields in State. (Wis. Ins. Sur., Oct. 4).

SPOTTED ALFALFA APHID (Therioaphis maculata) - IDAHO - First seasonal activity October 2 on seedling alfalfa field in Arena Valley near Parma, Canyon County; 1-2 per leaf killed 10 percent and severely weakened 40 percent of plants. (Waters). ARIZONA - Counts per 100 sweeps in alfalfa averaged 350 in many fields in Mesa area, Maricopa County, and 180 in one field at Yuma, Yuma County. (Ariz. Coop. Sur.). NEW MEXICO - Very light in all alfalfa-growing areas. (N.M. Coop. Rpt.). OKLAHOMA - Heavy numbers killed several fall-seeded alfalfa fields in Washita County; ranged 30-50 per 10 sweeps in Tillman County. (Okla. Coop. Sur.). KANSAS - Trace, 0-3 per 10 sweeps, in alfalfa field in Kearney County. (Simpson). ARKANSAS - Ranged 300-400 per 100 sweeps in alfalfa in Washington County. (Boyer). NEBRASKA - Ranged 0-14 (average 2-5) per 100 sweeps in 12 Dawson County alfalfa fields; egg-laying forms noted. (Manglitz, Oct. 4). VIRGINIA - Ranged 700-1,000 per 100 sweeps in 15-acre alfalfa field in Campbell County. (Allen).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - MICHIGAN - Survey revealed 75 percent of larvae in ears preparing for hibernation. (Janes, Oct. 8). WISCONSIN - Heavier on corn than in 1967 in eastern and central areas. Abundant in ears of field corn in south-central counties. O. nubilalis more numerous and damaging to corn ears than Heliothis zea in many fields. (Wis. Ins. Sur.). SOUTH DAKOTA - Fall abundance survey indicated little population fluctuation on corn in Beadle County compared with 1967, but marked increase in Kingsbury County. (Jones). NEBRASKA - Preliminary results of fall survey indicate sharp increase in populations on corn for 1968. (Keith).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - TEXAS - Survey conducted on corn in 15 panhandle counties September 25 to October 7. Infestations ranged 30-90 percent on field corn in four most southern counties surveyed and 0-20 percent on field and sweet corn in remaining 11 counties. (Daniels). ARKANSAS - Much heavier in late corn than early planted corn in State. Lodged 0-40+ percent of stalks. (Boyer, Oct. 4). ILLINOIS - Larvae averaged 19.2 per 100 cornstalks during survey in Pulaski and Alexander Counties week ending September 27; total stalk infestation 21.6 percent; 4.8 percent of stalks lodged. Maximum stalk infestation one percent in 2 cornfields in Saline County. Collected by H.B. Petty September 24 at Ridgway, Gallatin County, for a new county record. (Ill. Ins. Rpt.).

SUGARCANE BORER (Diatraea saccharalis) - TEXAS - Widespread and heavy on corn and sorghum in lower Rio Grande Valley. Egg masses 1.4-5.4 per cornstalk and 1.5 per sorghum stalk. Up to 92 percent of stalks bored in some sorghum fields. (Schuster, Oct. 4).

NEOTROPICAL CORN BORER (Diatraea lineolata) - TEXAS - Widespread and medium on pretassel corn in lower Rio Grande Valley. Egg masses 0.1-0.9 per stalk in fields checked. (Schuster, Oct. 4).

FALL ARMYWORM (Spodoptera frugiperda) - TEXAS - Survey conducted on field and sweet corn in 15 panhandle counties September 25 to October 7. Infestations ranged 25-80 percent; generally, infestations heavier in southern section of area surveyed. (Daniels).

SORGHUM WEBWORM (Celama sorghiella) - MISSISSIPPI - General in late sorghum. Heavy infestation in Sharkey County required treatment last week. Moderate on Oktibbeha and Lowndes County sorghum. (Dinkins, Oct. 4).

WESTERN BEAN CUTWORM (Loxagrotis albicosta) - COLORADO - Larval infestation extensive on corn in southern Weld County; present in Logan County. (Boyes, Johnson).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - NEW HAMPSHIRE - Adults found September 13 at Stratham, Rockingham County; September 19 at Hopkinton, Merrimack County; and October 3 at Milford, Hillsborough County. All new county records. (Sutherland). MICHIGAN - Adults still prevalent in field corn in southern counties as of October 3. (Janes).

CORN ROOTWORMS (Diabrotica spp.) - NEBRASKA - Adults common in 8 cornfields surveyed in Cuming County; averaged about 1 per 10 plants. (Hill, Keith).

SMALL GRAINS

PALE WESTERN CUTWORM (Agrotis orthogonia) - KANSAS - Moth catches extremely high in blacklight traps last 2 weeks at Garden City, Finney County, and Hugoton, Stevens County. Moth collections high last fall at Garden City and resulting larval populations past spring high and extremely damaging. Counts this year at Hugoton 3 times higher than peak in 1967. Peak flight in 1968 nearly 4 weeks later than in 1967. (Simpson).

FALL ARMYWORM (*Spodoptera frugiperda*) - MISSISSIPPI - Light to moderate on small grains in Monroe, Oktibbeha, Hinds, and Rankin Counties. (Dinkins, Oct. 4).

APHIDS - KANSAS - *Rhopalosiphum fitchii* and *Macrosiphum avenae* trace in most wheat examined in Thomas, Wallace, Wichita, Scott, Kearney, and Finney Counties. *R. rufiabdominalis* light in all wheat examined in western third of State. (Simpson).

TURF, PASTURES, RANGELAND

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - ALABAMA - Numerous older larvae almost destroyed stands of 2 to 3-inch ryegrass on 5 farms (about 250 acres) in Barbour County. Land previously in peanuts this season. Acreage to be replanted. (McQueen).

VELVETBEAN CATERPILLAR (*Anticarsia gemmatalis*) - ALABAMA - Caused some damage in field of 2 to 5-inch ryegrass at Foley, Baldwin County. Field adjoined heavily infested soybean field where older larvae migrating in search of food. (Wilson).

RED-LEGGED GRASSHOPPER (*Melanoplus femurrubrum*) - VIRGINIA - Adults, mostly this species, 1-2 per square yard on rangeland in southern Campbell County; no economic damage. (Allen, Rowell). ALABAMA - *M. femurrubrum* and other grasshoppers feeding on seedling crimson and white clover in pasture sod at several locations in Lee, Macon, and Tallapoosa Counties. (Barwood et al.).

A CRICKET (*Nemobius fasciatus*) - VIRGINIA - Adults up to 8-10 per square yard on pastureland in southern Campbell County. (Allen, Rowell). ALABAMA - Adults and nymphs numerous and feeding on seedling crimson and white clover in pasture sod at several locations in Lee, Macon, and Tallapoosa Counties. *Acheta* spp. also feeding. (Barwood et al.).

SOUTHERN CHINCH BUG (*Blissus insularis*) - TEXAS - Heavy, damaging St. Augustine grass at Bryan, Brazos County. (Green).

A DELPHACID PLANTHOPPER (*Delphacodes propinqua*) - TEXAS - Heavy, severely stunted Coastal Bermuda and star grass in lower Rio Grande Valley. (Schuster, Oct. 4).

RHODES-GRASS SCALE (*Antonina graminis*) - CALIFORNIA - Light to heavy on Bermuda grass locally at Indio, Riverside County. (Cal. Coop. Rpt.).

A MARCH FLY (*Dilophus orbatus*) - CALIFORNIA - Adults heavy on lawns at San Francisco, San Francisco County, and Los Altos and Cupertino, Santa Clara County; very annoying to homeowners. (Cal. Coop. Rpt.).

FORAGE LEGUMES

BEET ARMYWORM (*Spodoptera exigua*) - ARIZONA - Ranged 20-1,800 per 100 sweeps in alfalfa at Yuma, Yuma County. Healthy larvae averaged 100 per 100 sweeps in alfalfa in Maricopa County; many other larvae diseased. (Ariz. Coop. Sur.).

YELLOW-STRIPED ARMYWORM (*Prodenia ornithogalli*) - ARIZONA - Averaged 250 per 100 sweeps in alfalfa in Salt River Valley, Maricopa County. (Ariz. Coop. Sur.).

BERTHA ARMYWORM (*Mamestra configurata*) - WASHINGTON - Heavy on alfalfa near Prosser, Benton County. (Gerlitz, Retan, Oct. 4).

ZEBRA CATERPILLAR (*Ceramica picta*) - NEVADA - Larval migrations heavy in forage legumes in Smith and Mason Valleys, Lyon County; numerous on roads. (Alcorn).

ALFALFA CATERPILLAR (Colias eurytheme) - ARIZONA - Counts per 100 sweeps in alfalfa averaged 135 at Yuma, Yuma County, and 100 in Salt River Valley, Maricopa County. (Ariz. Coop. Sur.). NEW MEXICO - Light in alfalfa around Espanola, Rio Arriba County. (Heninger).

A WALSHIID MOTH (Walshia miscecolorella) - NEBRASKA - Collected 2 larvae in roots of volunteer sweetclover along roadside near Cairo, Hall County. This is a new county record. (Manglitz, Oct. 4).

PEA APHID (Acyrthosiphon pisum) - MISSISSIPPI - Adults and nymphs averaged 25 per 100 sweeps in Oktibbeha County alfalfa. (Dinkins). KANSAS - Light, 10-15 per 10 sweeps, in alfalfa in Kearney County. (Simpson). NEBRASKA - Ranged 5-416 per 100 sweeps in 12 Dawson County alfalfa fields. (Manglitz, Oct. 4). NEW MEXICO - Generally light in alfalfa over most of State. (N.M. Coop. Rpt.). UTAH - Ranged 50-500 per 10 sweeps in succulent alfalfa growth at Willard, Box Elder County, and Ogden, Weber County. (Knowlton, Oct. 8).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Average per 100 sweeps in alfalfa by county: Pinal, 125 at Casa Grande; Maricopa, 90 in Salt River Valley; Yuma, 465 at Yuma. (Ariz. Coop. Sur.). OKLAHOMA - Averaged 40 per 10 sweeps in alfalfa in Tillman County. (Okla. Coop. Sur.). MISSISSIPPI - Averaged 10 per 100 sweeps on Oktibbeha County alfalfa. (Dinkins).

LYGUS BUGS (Lygus spp.) - ARIZONA - Heavy in all alfalfa in Safford area, Graham County. Counts per 100 sweeps in alfalfa averaged 30 at Casa Grande, Pinal County, and 200 at Yuma, Yuma County. (Ariz. Coop. Sur.).

TARNISHED PLANT BUG (Lygus lineolaris) - MICHIGAN - Collected 187 in 200 sweeps in Lenawee County alfalfa field October 3. (Janes). ARKANSAS - Ranged 50-75 per 100 sweeps in alfalfa in Washington County. (Boyer). WISCONSIN - Adults averaged about 5 per sweep in central area alfalfa. (Wis. Ins. Sur.).

ALFALFA WEEVIL (Hypera postica) - NEBRASKA - Collected one larva in 1,200 sweeps in 12 Dawson County alfalfa fields. (Manglitz, Oct. 4). ARKANSAS - Survey negative in Washington County. (Boyer).

GRASSHOPPERS (Melanoplus spp.) - PENNSYLVANIA - M. femurrubrum and M. differentialis caused browning of crown vetch along State Highway 72 in Lebanon County October 3. Determined by E.E. Simons. (Jeffery, Rhoads).

SOYBEANS

VELVETBEAN CATERPILLAR (Anticarsia gemmatalis) - ALABAMA - Populations and damage varies in Mobile, Baldwin, and Marengo Counties. (Seibels et al.). Comprised 98 percent of leaf feeders that destroyed 95+ percent of 130-acre field at Foley, Baldwin County. Few pods turning brown. Controls applied, but doubtful whether harvest worthwhile. (Wilson).

NOCTUID MOTHS (Heliothis spp.) - ALABAMA - Larvae light to medium in all immature fields surveyed at Foley, Baldwin County. Several thousand acres received one insecticide application; many acres treated 3 times. (Wilson).

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) - ALABAMA - This species and other leaf feeders light to medium at Foley, Baldwin County. Damaging numbers usually rare on soybeans except in extreme southwest area. (Wilson et al.).

MEXICAN BEAN BEETLE (Epilachna varivestis) - VIRGINIA - Populations much below 1967 in Holland area; damage noneconomic. Situation much better than in 1967 in Nansemond and surrounding counties. (Smith). Soybeans beyond economic damage in Westmoreland County. (Ptucha). ALABAMA - Present in most soybean fields, but damaging only in untreated home gardens at Foley, Baldwin County. (Wilson).

BEAN LEAF BEETLE (Cerotoma trifurcata) - MISSISSIPPI - Adults moderate, feeding on foliage of 3 late-planted Yazoo County fields. (Dinkins).

COTTON

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Activity increased past week in Martin County. Light in Midland County; medium to heavy in Glasscock and Reagan Counties. (Neeb, Oct. 4). OKLAHOMA - Infested 10 percent of late crop in Ellis County. (Okla. Coop. Sur.).

BOLLWORMS (Heliothis spp.) - MISSISSIPPI - H. zea and H. virescens heavy in some late Yazoo County fields; some damage to young bolls. (Dinkins, Oct. 4). TEXAS - H. zea and H. virescens activity generally light in Trans-Pecos area past week. Of 85 larvae examined in El Paso County, 83 determined H. virescens. (Neeb, Oct. 4). ARIZONA - H. zea light in large green bolls at Queen Creek, Maricopa County. (Ariz. Coop. Sur.).

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Larvae 3-4 per plant at Safford, Graham County. (Ariz. Coop. Sur.).

FALL ARMYWORM (Spodoptera frugiperda) - MISSISSIPPI - Light in De Soto County; some feeding. (Dinkins, Oct. 4).

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Light in Salt River Valley, Maricopa County, and in Gila Valley, Graham County. (Ariz. Coop. Sur.).

COTTON APHID (Aphis gossypii) - NEW MEXICO - Heavy in one field of late export cotton in Luna County; honeydew also heavy. (Campbell). Increasing north of Hatch in northern Dona Ana County. (Elson).

SUGARBEETS

BERTHA ARMYWORM (Mamestra configurata) - WASHINGTON - Heavy near Prosser, Benton County. (Gerlitz, Retan, Oct. 4).

MISCELLANEOUS FIELD CROPS

SUNFLOWER MOTH (Homoeosoma electellum) - ARKANSAS - Earlier this season, larvae up to 75-80 per sunflower head in early Jackson County fields. This week, larvae never more than 1 per head in 2 late Jackson County fields. Infested only about 2 percent of heads. Latter 2 fields planted July 20. (Boyer, Oct. 4).

POTATOES, TOMATOES, PEPPERS

BERTHA ARMYWORM (Mamestra configurata) - WASHINGTON - Heavy in late potatoes near Prosser, Benton County. (Gerlitz, Retan, Oct. 4).

EUROPEAN CORN BORER (Ostrinia nubilalis) - ALABAMA - Larvae continue light on pimento peppers in Sand Mountain area. Good control efforts and selective harvesting practically eliminated damaged peppers reaching market. Yield loss light. (Leeper et al.).

GENERAL VEGETABLES

BEET ARMYWORM (Spodoptera exigua) - ARIZONA - Treatments continue on lettuce at Yuma, Yuma County. (Ariz. Coop. Sur.).

CABBAGE LOOPER (*Trichoplusia ni*) - ARIZONA - Larvae up to 7 per plant in small lettuce field in Mesa area, Maricopa County; treatments continue on lettuce in Cochise, Maricopa, Pima, Pinal, and Yuma Counties. (Ariz. Coop. Sur.).

NOCTUID MOTHS - MICHIGAN - Abnormally high in Montcalm County blacklight trap past week; collected 174 *Amathes c-nigrum*, 434 *Agrotis ipsilon*, and 419 *Peridroma saucia*. Larvae could be serious problem next spring. Emergence pattern prolonged due to mild fall temperatures and no killing frosts. Mildness or severity of coming winter could alter prediction considerably. (Janes, Oct. 8).

DECIDUOUS FRUITS AND NUTS

SHOT-HOLE BORER (*Scolytus rugulosus*) - WASHINGTON - Second-generation emergence from stone fruits in upper Yakima Valley at or near peak on September 26. (Johnson).

PEAR-SLUG (*Caliroa cerasi*) - UTAH - Conspicuously marking plum, prune, and cherry foliage at Willard and Brigham City, Box Elder County. (Knowlton, Oct. 8).

APHIDS - NEW MEXICO - *Eriosoma lanigerum* light to heavy in apple orchards at Santa Cruz, Santa Fe County. (Heninger). OREGON - Large numbers of *E. pyricola* alates flying in young pear orchard near Jacksonville, Jackson County. (Larson). WASHINGTON - First massive fall flight of *Myzus persicae* in Yakima County September 30. (Johnson). UTAH - *Myzocallis coryli* making ornamental hazelnut foliage and soil beneath extremely sticky at Logan, Cache County. (Knowlton, Oct. 8). ALABAMA - *Myzocallis caryaefoliae* leaf damage heavy throughout unsprayed pecan orchards in Barbour County. (Leeper, Walton).

A LEAFHOPPER (*Keonolla confluens*) - WASHINGTON - Large concentrations of adults feeding on peach; up to 25 adults per peach leaf September 30 in Yakima County. (Johnson).

RED-BANDED LEAF ROLLER (*Argyrotaenia velutinana*) - INDIANA - During past week at Vincennes, 36 virgin female traps (10 females per trap) caught 187 males, about third of number caught week before. Adult activity low. (Dolphin, Oct. 7).

LESSER PEACH TREE BORER (*Synanthedon pictipes*) - INDIANA - Seasonal adult activity about over at Vincennes; virgin female traps caught 25 males. (Dolphin, Oct. 7).

ORIENTAL FRUIT MOTH (*Grapholitha molesta*) - INDIANA - Adults in bait jars at Vincennes dropped to low level (18). (Dolphin, Oct. 7).

CODLING MOTH (*Carpocapsa pomonella*) - INDIANA - Adults still low at Vincennes. Sex lure traps caught 7 males (10 previous week). Full-grown larvae leaving fruit to pupate. (Dolphin, Oct. 7). CALIFORNIA - Medium on crab apple trees at Napa, Napa County. (Cal. Coop. Rpt.).

APPLE MAGGOT (*Rhagoletis pomonella*) - INDIANA - Stickyboard captures of adults at Vincennes progressively decreasing each week from 160 to 31 to 15. Prepupae still leaving apples. (Dolphin, Oct. 7).

ORCHARD MITES - NEW MEXICO - Moderately light to heavy on apples at Santa Cruz, Santa Fe County; leaf burn noted. (Heninger). UTAH - *Tetranychus* spp. webbing and numbers conspicuous from lower crotches of apple trees to soil level in Weber County orchards. (Knowlton, Oct. 8). WISCONSIN - *Panonychus ulmi* higher than normal and difficult to control this season, according to one Green County fruit grower. (Wis. Ins. Sur., Oct. 4). CALIFORNIA - *Aceria brachytarsus* medium on black walnut leaves in Fair Oaks, Sacramento County. (Cal. Coop. Rpt.).

PECAN WEEVIL (Curculio caryae) - TEXAS - Heavy with much late damage to pecans near Stephenville, Erath County. (Hancock, Van Cleave). MISSISSIPPI - Light in pecan grove in Oktibbeha County; damaged an estimated 5 percent of nuts. (Dinkins). ALABAMA - Older larvae light in pecans under isolated trees in Barbour County. No emergence holes yet but expected soon. (Leeper, Walton).

TWIG GIRDLER (Oncideres cingulata) - ALABAMA - Scattered twig cutting and egg laying on hickory, persimmon, and pecan trees in Macon, Tallapoosa, Coosa, Autauga, and Chilton Counties. (Barwood).

WALNUT CATERPILLAR (Datana integerrima) - OKLAHOMA - Heavy on Noble County pecan trees. (Okla. Coop. Sur.).

WALNUT HUSK FLY (Rhagoletis completa) - OREGON - Infested 90 percent of several black walnut trees at Hermiston, Umatilla County; larvae averaged 25 per fallen fruit. (Westcott, Sept. 20).

A COREID BUG (Hyalymenus tarsatus) - TEXAS - Moderate, damaging pecans near Goliad, Goliad County; detected on nut clusters. (Hajdik).

INSECT DETECTION

A CARPENTER ANT (Camponotus variegatus hawaiiensis Forel) - NEVADA - Taken from empty powder cans at naval ammunition depot, Hawthorne, Mineral County, by H. Reynolds June 27, 1968. Determined by D.R. Smith. Infestation originally found in large shipping unit containing ammunition boxes and other equipment. Unit originated from overseas and was fumigated 4-6 hours after arrival at depot; surrounding area was treated also. When unit was first opened, prior to treatment, numerous winged forms flew from site. Whether these reproductive forms will survive and become established in area is not known. (Bechtel).

New State Records

A LADY BEETLE (Scymnus intrusoides) - WASHINGTON - In trap 0.5 mile north of George, Grant County, September 9, 1968. Collected by B.J. Landis. Determined by M.H. Hatch. (p. 987).

A MYMARID WASP (Gonatocerus mexicanus) - INDIANA - Female collected on farm at New Carlisle, St. Joseph County, August 28, 1968, by T.L. Burger. Determined by B.D. Burks. (p. 987).

New County Records

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - ILLINOIS - Gallatin County. (p. 978).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - NEW HAMPSHIRE - Hillsborough, Merrimack, and Rockingham Counties. (p. 978).

A WALSHIID MOTH (Walshia miscecolorella) - NEBRASKA - Hall County. (p. 980).

SPRUCE NEEDLE MINER (Taniva albolineana) - OHIO - Hamilton County. (p. 985).

A WHITE-FRINGED BEETLE (Graphognathus leucoloma striatus) - MISSOURI - New Madrid and Pemiscot Counties. (p. 987).

CORRECTIONS

CEIR 18(40):950 - HEMIPTEROUS PREDATORS - ARIZONA -...Orius spp., 30 at Bonita, Cochise County, should read...30 at Bonita, Graham County...(Ariz. Coop. Sur.).

CITRUS

Citrus Insect Situation in Florida - End of September - CITRUS RUST MITE (*Phyllocoptruta oleivora*) infested 52 percent of groves (norm 57 percent); 30 percent economic (norm 35 percent). Decreased to normal September level at midmonth and remained in low range until end of month. Increase expected through October. Will be heavy on fruit in about 25 percent of groves. Highest districts west, south, and north. TEXAS CITRUS MITE (*Eutetranychus banksi*) infested 10 percent of groves (norm 17 percent); less than 1 percent economic (norm 4 percent). At lowest September level since 1955. Increase expected in late October but expected to continue in low range in all districts. Highest district north. CITRUS RED MITE (*Panonychus citri*) infested 12 percent of groves (norm 24 percent); less than 1 percent economic (norm 4 percent). Population lowest for September in 18 years of record; will remain low despite gradual increase expected in October. Highest district east. BLACK SCALE (*Saissetia oleae*) infested 35 percent of groves (norm 38 percent); 13 percent economic (norm 15 percent). Dropped out of high range early in September; in normal low range by end of month. Little change expected. Highest district east. GLOVER SCALE (*Lepidosaphes gloverii*) infested 28 percent of groves (norm 56 percent); 1 percent economic (norm 9 percent). Populations lowest for September since 1961; will remain below average and in low range through October. Highest district west. PURPLE SCALE (*L. beckii*) infested 16 percent of groves (norm 50 percent); less than 1 percent economic (norm 2 percent). At lowest September level in 18 years of record. Will continue very light in all districts. CHAFF SCALE (*Parlatoria pergandii*) infested 9 percent of groves (norm 35 percent); less than 1 percent economic (norm 3 percent). Population lowest for September since June 1951. Will continue very low. YELLOW SCALE (*Aonidiella citrina*) infested 32 percent of groves (norm 49 percent); less than 1 percent economic (norm 7 percent). Much below normal and at lowest September level since 1961. Little change expected. An ARMORED SCALE (*Unaspis citri*) infested 13 percent of groves; 1 percent economic. Activity diminished in September but expected to intensify in October. WHITEFLIES infested 52 percent of groves; 14 percent economic. Increasing but expected to remain near moderate level normal for October. Adults will be less numerous. (W.A. Simanton (Citrus Expt. Sta., Lake Alfred)).

SMALL FRUITS

A LEAF ROLLER MOTH (*Platynota stultana*) - CALIFORNIA - Larvae heavy on grape plantings at Famoso, Kern County. (Cal. Coop. Rpt.).

STRAWBERRY ROOT APHID (*Aphis forbesi*) - CALIFORNIA - Nymphs and adults heavy on strawberry plantings at Napa, Napa County. (Cal. Coop. Rpt.).

ORNAMENTALS

BAGWORM (*Thyridopteryx ephemeraeformis*) - ALABAMA - Many bags filled with eggs observed on cedar trees, arborvitae, junipers, and some deciduous trees in much of central and northern areas. Smaller, scattered infestations in parts of southern area. (McQueen).

ARMORED SCALES - TEXAS - *Fiorinia theae* and *Unaspis euonymi* numerous on ornamentals examined in Nacogdoches, Angelina, and Smith Counties. (Thomas). OKLAHOMA - *U. euonymi* egg hatch complete, crawlers active on euonymus checked in Stillwater, Payne County. (Okla. Coop. Sur.).

HARLEQUIN BUG (*Murgantia histrionica*) - TENNESSEE - Nymphs congregating under shrubs near houses, causing concern in some areas of Davidson County. (Quillin, Oct. 2).

SPIDER MITES - NEW MEXICO - *Tetranychus* spp. heavy on arborvitae, ornamental junipers, palms, gardenias, gladioli, and cannas at Espanola, Rio Arriba County, and Sante Fe, Santa Fe County. (Heninger). CALIFORNIA - *Eurytetranychus buxi* heavy on *Buxus japonica* plants at Redlands, San Bernardino County. (Cal. Coop. Rpt.).

FOREST AND SHADE TREES

WHITE-PINE WEEVIL (Pissodes strobi)-WEST VIRGINIA - Infested 75 percent of white pine in 3-acre stand in Upshur County. Adults collected September 25. (W. Va. For. Ins. and Dis. Det.).

PINE ENGRAVER (Ips pini) - WISCONSIN - Egg laying underway August 14; larvae and pupae present by September 12 and adults by mid-September in red pine pulpwood in southern Columbia County. Secondary borers became active by latter date. (Wis. Ins. Sur.).

RED-HEADED PINE SAWFLY (Neodiprion lecontei) - WEST VIRGINIA - Defoliation up to 80 percent on small number of Virginia and Scotch pines in Lewis County September 26. (W. Va. For. Ins. and Dis. Det.).

SPRUCE NEEDLE MINER (Taniva albolineana) - OHIO - Heavy on blue spruce near Miamitown in Hamilton County for a new county record. (Cooley). Previously reported from many areas of State, especially central and southern sections. (PPC).

SADDLED PROMINENT (Heterocampa guttivitta) - PENNSYLVANIA - Defoliation 50+ percent on about 1,500 acres of deciduous forest trees in Wayne County September 25. Collected 62 live pupae in area. (Rhodes).

FALL WEBWORM (Hyphantria cunea) - NEW MEXICO - Damage heavy on numerous trees throughout State. (N.M. Coop. Rpt.).

FALL CANKERWORM (Alsophila pometaria) - WISCONSIN - Adults emerging and laying eggs on Chinese elm in northern Dane County past weekend. (Wis. Ins. Sur., Oct. 4).

TWIG GIRDLER (Oncideres cingulata) - TEXAS - Much damage to shade trees in central area. Much activity noted at Groesbeck, Limestone County. (Texas Coop. Rpt.).

ELM LEAF BEETLE (Pyrrhalta luteola) - TENNESSEE - Damaging elm in western area. (Roberts, Berrier, Oct. 4).

Aphids on Juglandaceae in Maryland and the District of Columbia in 1968 - Adult stem mothers of Monellia microsetosa, Monelliopsis nigropunctata, and Myzocallis caryaefoliae had appeared on hickory trees at the National Arboretum in Washington, D.C., April 18. This is the earliest on record that adult stem mothers of the 3 species have been taken in the area at College Park, Maryland. Monellia costalis adults appeared April 24 and Protopterocallis canadensis adults appeared on April 27. On May 4 Monellia microsetosa was abundant enough to produce a conspicuous quantity of honeydew on Carya glabra at the National Arboretum. On black walnut Monelliopsis caryae stem mother adults appeared April 30 at College Park and the species was abundant by May 9. About 60 adults and 100 nymphs of Monelliopsis nigropunctata were found on two leaflets of Carya ovata in Garrett County on September 19. The same leaves, also infested with mites, were visibly whitened. From July through September, aphids were scarce (with the exception of the one collection of M. nigropunctata just noted) in the following areas: St. Marys, Prince Georges, and Garrett Counties, Maryland, and the District of Columbia. During nearly 6 hours actual collecting time on hickories and black walnut a total of only 139 young and adult aphids were found. These included three species of Monellia, three species of Monelliopsis, one species of Myzocallis, and two species of Protopterocallis. (T.L. Bissell).

PAINTED MAPLE APHID (Drepanaphis acerifoliae) - ARKANSAS - Increased rapidly on red maple at Fayetteville, Washington County; up to 100 or more per leaf; only 5-10 percent alates. (Boyer).

A LEAFHOPPER (Keonolla confluens) - WASHINGTON - Large concentrations of adults feeding on sycamore and willow at Yakima, Yakima County. (Johnson, Sept. 30).

A FALSE SPIDER MITE (Brevipalpus cardinalis) - ARIZONA - Moderate on ash trees in

Salt River Valley, Maricopa County. Collected by J. May. Determined by D. Tuttle. (Ariz. Coop. Sur.).

MAN AND ANIMALS

MOSQUITOES - MINNESOTA - Some daytime nuisance activity still reported on warm days. In final light trap collections for season during September 21-27: Aedes vexans predominant with 477, Culiseta inornata 171, Uranotaenia sapphirina 164, Culex territans 72, and Anopheles walkeri 52. Hatch 17 percent in eggs submerged in laboratory September 25; 11 percent on October 2 (Minn. Ins. Rpt.).

SCREW-WORM (Cochliomyia hominivorax) - Total of 796 cases reported in U.S. October 6-12 as follows: TEXAS - Aransas 1, Atascosa 9, Bandera 3, Bee 5, Bexar 11, Brewster 7, Brooks 34, Brown 1, Burnet 3, Caldwell 1, Callahan 2, Cameron 4, Coleman 3, Comal 5, Comanche 2, Concho 4, Crockett 22, De Witt 8, Dimmit 18, Duval 11, Ector 1, Edwards 29, Fisher 1, Frio 11, Gillespie 8, Goliad 5, Gonzales 3, Hays 6, Hidalgo 23, Howard 2, Irion 4, Jack 1, Jeff Davis 11, Jim Hogg 7, Jim Wells 14, Karnes 11, Kendall 2, Kenedy 2, Kerr 7, Kimble 4, Kinney 37, Kleberg 2, Lampasas 4, La Salle 15, Live Oak 8, Llano 3, McCulloch 2, Mason 9, Maverick 18, Medina 27, Menard 4, Midland 1, McMullen 6, Nolan 1, Nueces 2, Pecos 20, Presidio 11, Real 7, Reeves 2, Refugio 1, Runnels 3, San Patricio 5, San Saba 2, Schleicher 15, Starr 20, Sterling 3, Sutton 20, Swisher 1, Taylor 2, Terrell 34, Tom Green 8, Upton 2, Uvalde 45, Val Verde 68, Ward 2, Webb 20, Wharton 1, Willacy 1, Williamson 1, Wilson 16, Winkler 2, Zapata 9, Zavala 18; ARIZONA - Gila 1, Maricopa 3, Yavapai 1; CALIFORNIA - Riverside 3, San Diego 2; NEW MEXICO - Eddy 1, Otero 1. Total of 1,018 cases reported in portion of Barrier Zone in Republic of Mexico as follows: Territorio sur de Baja California 104, Sonora 369, Chihuahua 191, Coahuila 185, Nuevo Leon 100, Tamaulipas 69. Total of 43 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 89,154,000; New Mexico 1,780,000; Arizona 9,640,000; California 1,800,000; Mexico 96,204,000. (Anim. Health Div.).

HORN FLY (Haematobia irritans) - TEXAS - Heavy on cattle near Brackettville, Kinney County. (Neeb, Oct. 4). OKLAHOMA - Ranged 1,000-1,200 per head on cattle in Woodward and Major Counties; moderate in Noble, Mayes, and Cleveland Counties. (Okla. Coop. Sur.). VIRGINIA - Generally light on Campbell County beef cattle. (Allen).

FACE FLY (Musca autumnalis) - VIRGINIA - Annoyed cattle in southern Campbell County. (Allen).

A LOUSE FLY (Pseudolynchia canariensis) - CALIFORNIA - Generally heavy in pigeon loft at Sacramento, Sacramento County; killing some squabs. (Cal. Coop. Rpt.).

HARD-BACKED TICKS - OKLAHOMA - Amblyomma americanum immatures continue numerous and annoying in scattered areas of Delaware and Cherokee Counties. Occasional adults of Dermacentor albipictus (winter tick) in Cherokee County. (Okla. Coop. Sur.).

HOUSEHOLDS AND STRUCTURES

FIELD CRICKETS (Gryllus spp.) - TEXAS - Heavy on cattle near Bracketville, Kinney area, Bell County, and in Caldwell, Guadalupe, Lavaca, Gonzales, Karnes, and Wilson Counties. (McMenemy, Massey).

STORED PRODUCTS

RED FLOUR BEETLE (Tribolium castaneum) - ALABAMA - Medium to large numbers of this and Oryzaephilus surinamensis (saw-toothed grain beetle) in sacks of feed and in waste materials of feed mills in Lee, Macon, and Tallapoosa Counties. (Barwood).

*Information as to designated laboratories and processing plants may be obtained from an inspector.

**Exempt if not exposed to infestation after cleaning or other prescribed handling.

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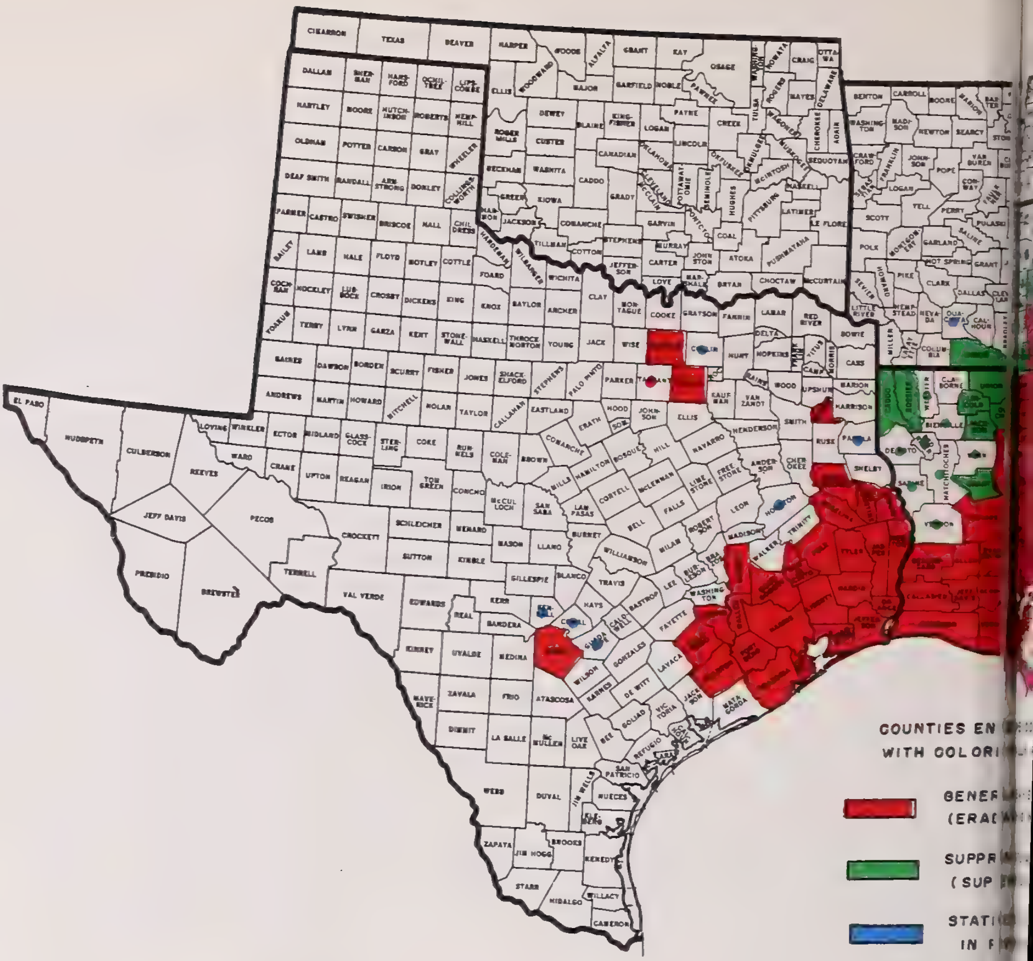

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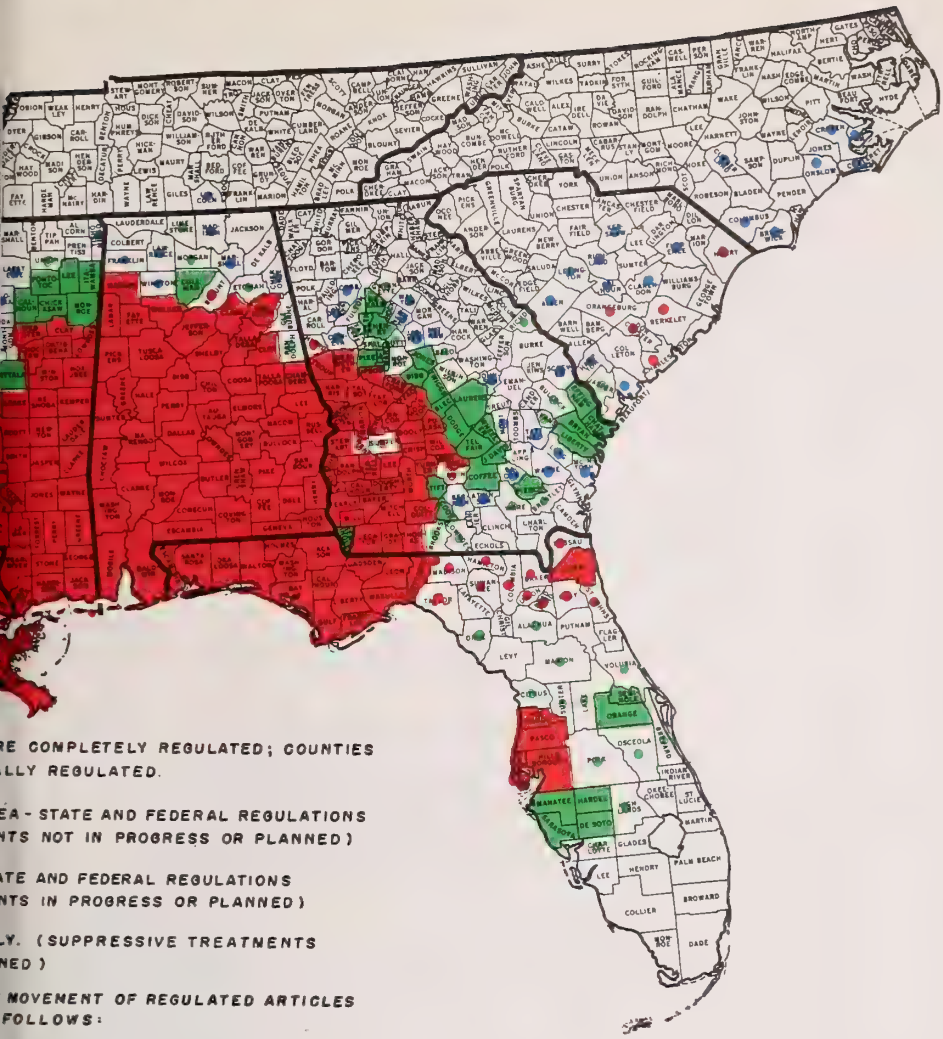

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U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
COOPERATING WITH AFFECTED STATES

Revised Aug. 15, 1968.

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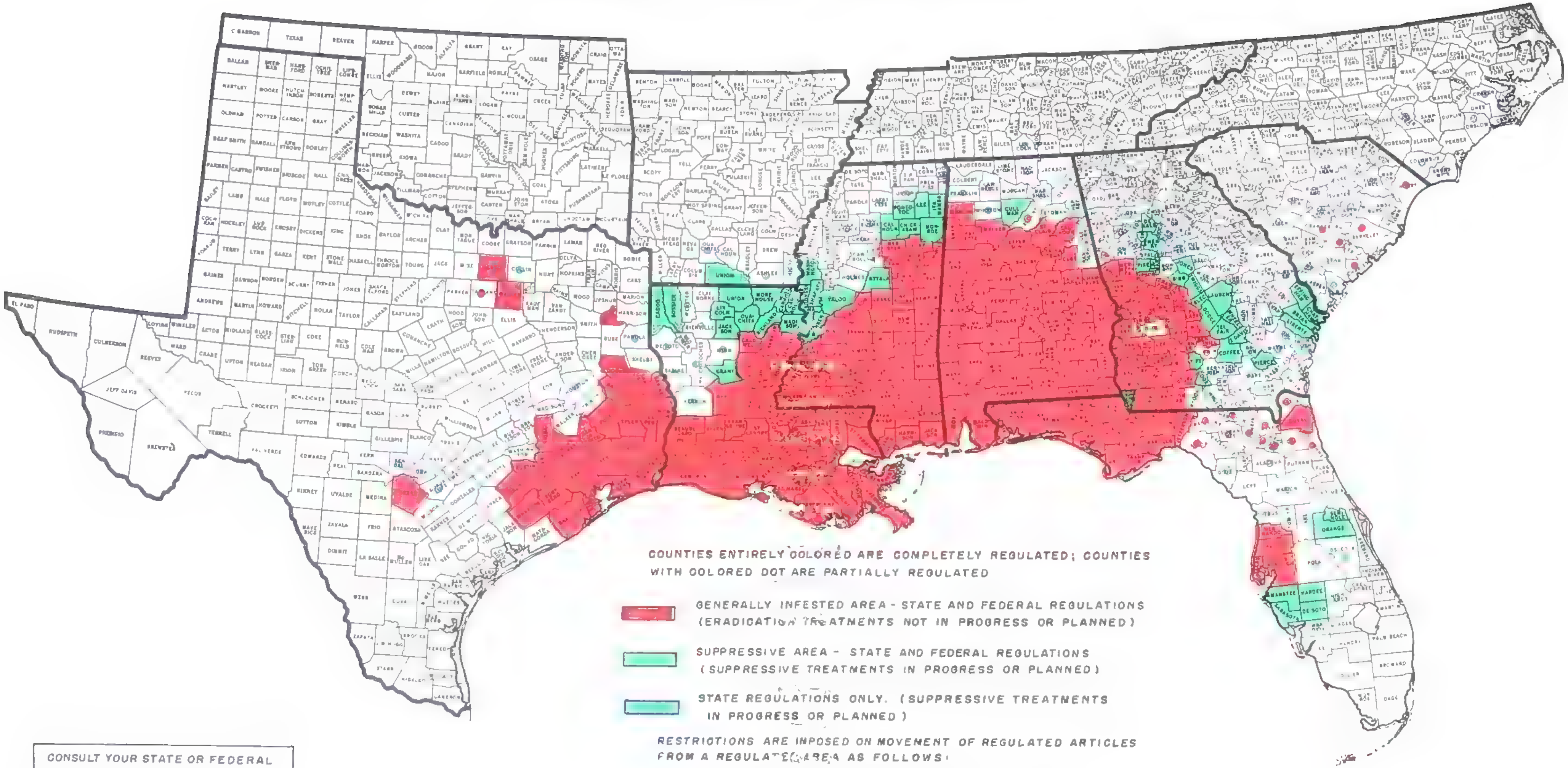

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🟦 STATE REGULATIONS ONLY. (SUPPRESSIVE TREATMENTS IN PROGRESS OR PLANNED)

RESTRICTIONS ARE IMPOSED ON MOVEMENT OF REGULATED ARTICLES FROM A REGULATED AREA AS FOLLOWS:

1. FROM RED INTO OR THROUGH GREEN, BLUE, OR WHITE
2. FROM GREEN INTO OR THROUGH WHITE OR BLUE.
3. GREEN INTO GREEN.
4. WITHIN GREEN °
5. FROM BLUE INTO ANY OTHER AREA. °°

° IF REQUIRED BY AN AUTHORIZED INSPECTOR.

°° IF REQUIRED BY APPROPRATE STATE QUARANTINE OR BY AN AUTHORIZED INSPECTOR

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SEE REVERSE SIDE FOR REQUIREMENTS CONCERNING CERTIFICATION OF REGULATED ARTICLES

Revised Aug 15, 1968

THE FOLLOWING CROPS OR ARTICLES MUST BE MOVED UNDER CERTIFICATE OR PERMIT YEAR-ROUND EXCEPT AS INDICATED:

1. Soil, compost, decomposed manure, humus, muck, and peat, separately or with other things.

   Soil samples of any size shipped to U.S. Army Corps of Engineers. Soil Laboratories within the conterminous U.S. are exempt.
   Soil samples of one pound or less are exempt if shipped to a designated laboratory.*

   Compost, decomposed manure, humus, and peat are exempt** if dehydrated, ground, pulverized, or compressed.

2. Plants with roots with soil attached.

3. Grass sod.

4. Hay and straw.

5. Logs, pulpwood, and stumpwood.

   Logs and pulpwood are exempt** provided the railroad loading site has been treated.

   Stumpwood if free of excessive amounts of soil is exempt** provided the railroad loading site has been treated and the stumpwood is consigned to a designated plant.*

6. Used mechanized soil-moving equipment.

   Used mechanized soil-moving equipment is exempt** if cleaned and repainted.

*Information as to designated laboratories and processing plants may be obtained from an inspector.
**Exempt if not exposed to infestation after cleaning or other prescribed handling.

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6. Used mechanized soil-moving equipment.

DRUGSTORE BEETLE (Stegobium paniceum) - TENNESSEE - Damaging cornmeal at Bristol, Sullivan County. (Williams).

BENEFICIAL INSECTS

A LADY BEETLE (Scymnus intrusoides) - WASHINGTON - Taken in trap 0.5 mile north of George, Grant County, September 9, 1968. Collected by B.J. Landis. Determined by M.H. Hatch. This is a new State record. (Landis, Retan).

A MYMARID WASP (Gonatocerus mexicanus) - INDIANA - Female collected on farm at New Carlisle, St. Joseph County, August 28, 1968, by T.L. Burger. Determined by B.D. Burks. This is a new State record. (Maltby).

BIG-EYED BUGS (Geocoris spp.) - ARIZONA - Averaged 150 per 100 sweeps on alfalfa in Salt River Valley, Maricopa County. (Ariz. Coop. Sur.). ARKANSAS - G. punctipes reproduction continues in green soybeans and late sunflowers in northeast area; adults and nymphs present. (Boyer, Oct. 4).

DAMSEL BUGS (Nabis spp.) - ARKANSAS - Active on late sunflowers and on green soybeans in northeast area. (Boyer, Oct. 4).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

COMSTOCK MEALYBUG (Pseudococcus comstocki) - CALIFORNIA - Infestations continuing but not spreading on mulberry trees in Porterville, Tulare County. Some parasites and predators active. Pseudaphycus malinus (an encyrtid wasp) disappeared after promising buildup this spring; apparently unable to withstand high summer temperatures and arid climate. (Cal. Coop. Rpt.).

PINK BOLLWORM (Pectinophora gossypiella) - CALIFORNIA - Released 595,277 sterile moths this week; number released well above average. Air drops made in all 4 Kern County drop zones. One marked moth recovered in drop zone I at Oildale and one, 3 miles east of east boundary of drop zone IV near Pentland. Latter find was first collection of a sterile moth 3 miles beyond border of drop zone. Recaptured 19 sterile moths to date. Regular release of 6,000 moths in Borrego Valley, San Diego County. Date of first collected moth in Kern County in 1967 has passed. (Cal. Coop. Rpt.). NEVADA - Male captures increased in sex lure traps in cotton in Pahrump Valley, Nye County. Collected 95 males in Pahrump Valley September 27 to October 2; collected 35 prior to this date. Collected 18 males in Moapa Valley, Clark County, October 4-8; 2 of specimens collected from sex lure traps in hollyhocks. (Bell, Yamashita). ARIZONA - Larvae light in lint cleaners in Graham County cotton gin. (Ariz. Coop. Sur.). NEW MEXICO - Late buildup in cotton areas of Eddy, Chaves, Dona Ana, Otero, and Luna Counties. (N.M. Coop. Rpt.). Late flights indicated by sex lure traps placed up and down Mesilla Valley, Dona Ana County. (Campbell, Elson). TEXAS - Increased activity in Trans-Pecos area week of October 4. Infested 12-15 percent of bolls in El Paso County fields; currently infests 5-10 percent of bolls in some Glasscock County fields. (Neeb).

WEST INDIAN SUGARCANE ROOT BORER (Diaprepes abbreviatus) - FLORIDA - Adult damage severe on citrus foliage, larvae girdling large citrus roots in young commercial grove near nursery where species previously reported in Orange County. Several hundred adults collected. (Woodruff et al., Oct. 4).

A WHITE-FRINGED BEETLE (Graphognathus leucoloma striatus) - MISSOURI - Adults on goldenrod and wild aster at Portageville, New Madrid County, and at Hayti, Pemiscot County. Collected by R. Thompson and R. House October 9. Determined by R.E. Warner. Both are new county records. (PPC).

HAWAII INSECT REPORT

Field Corn - SOUTHERN GREEN STINK BUG (Nezara viridula) adults and nymphs heavy at Waikii, Hawaii Island. Adults of Trichopoda pennipes var. pilipes (a tachina fly) readily detected. (Kami).

Turf, Pasture - Moths of a GRASS WEBWORM (Herpetogramma licarsisalis) annoying around homes at Paauilo, Honokaa, and Kawaihae on Hawaii Island. Larvae averaged 25-30 per square foot of turf at Kawaihae. Larval activity increasing at Kipahulu and Hana, Maui; moderately damaged 75 acres of Kikuyu and crabgrasses. Light to moderate larval infestations reappearing in pastures and lawns in scattered areas of Oahu. (Kobayashi et al.).

Beans - BEAN FLY (Melanagromyza phaseoli) damaged about half of snap bean seedlings in gardens at Waikapu on Maui. Damage trace to light on snap and long beans at Waimanalo and Waianae on Oahu. (Ah Sam et al.).

Fruits, Ornamentals - CHINESE ROSE BEETLE (Adoretus sinicus) adults and foliar damage continue heavy on rose, apple, and grape at Makawao and lower Olinda on Maui. (Miyahira). COCONUT SCALE (Aspidiotus destructor) surveys indicate species widespread on coconut leaves on Oahu. Infestations light to moderate to date at Kailua, Kaneohe, Sand Island, Honolulu Airport and vicinity, Moanalua, Waimalu, Aiea Heights, Ewa, and Waianae. (Fluker, Beardsley).

Forest and Shade Trees - All stages of a BARK BEETLE (Xylosandrus compactus) light to heavy on following new hosts on Mt. Kaala, Oahu. Exotic plants infested were thimbleberry (Rubus rosaefolius), lantana (Lantana camara var. aculeata), and butterflybush (Buddleia asiatica). Native trees infested were Perrottetia sandwicensis, Gouldia St.-Johnii, Coprosma sp., Pelea sp., and Antidesma platyphyllum. (Davis, Olson).

Beneficial Insects - Adults of a DUNG BEETLE (Copris incertus prociduus) ranged 10-15 per cow pad in pastures in South Kohala District on Hawaii Island and along Kaluapulani Gulch on Maui. (Yamayoshi et al.). Several adults of a SCIOMYZID FLY (Sepedon sauteri) noted on taro foliage at Keanae and Waihee, Maui; appears established in both areas. Flies last released on Maui in July 1968. (Miyahira).

Miscellaneous Pests - Chemical baits for GIANT AFRICAN SNAIL (Achatina fulica) continued at Kona on Hawaii Island and at Poipu and Wahiawa on Kauai. Five live juveniles collected during September at Kona. No live snails detected on Kauai. Close surveillance will be maintained during rainy season. (Yoshioka, Sugawa). First and second instars of a GRASSHOPPER (Oedaleus abruptus) numerous on short grass in localized areas at Hickam Air Force Base, Honolulu, Oahu. First incidence of heavy nymphal populations in treated areas. First heavy rains of year apparently triggered egg hatch. (Olson, Otsuka).

and 11th. A few snow flurries were noted in the higher mountains in northern New England on Friday. Widely scattered light showers fell in the Florida Peninsula on several days. Arizona and New Mexico and nearby portions of neighboring States received no rain or only very light sprinkles.

TEMPERATURE: As warm, moist air streamed northward over mid-America early in the week, much colder air plunged southward through the western interior. On Wednesday morning the temperature dropped to 9° at Evanston, Wyoming, and to 21° at Alamosa, Colorado. Mild weather continued over the south with afternoon readings in the 70's and 80's and early morning readings mostly in the 60's. Quick weekend warming occurred over the central Great Plains. Pierre, South Dakota, registered 86° and Fargo, North Dakota, 80° on Sunday afternoon. A warming trend occurred over the East with weekend temperatures over much of the Northeast reaching the 70's by Sunday afternoon. Cool weather persisted over the West, however, with most of the area from the Pacific Ocean to the western Great Plains in the north and to the Continental Divide in the south averaging below normal. Much of the Northwest averaged 4° to 8° below normal. The middle Mississippi River and the Ohio River Valleys also averaged slightly below normal. (Summary supplied by Environmental Data Service, ESSA).

LIGHT TRAP COLLECTIONS

	Tempera-ture °F.	Precip-itation (inches)	BL = blacklight I = incandescent MV = mercury vapor O = other Type of trap	Agrotis ipsilon (black cutworm)	Carpocapsa pomonella (codling moth)	Chorizagrotis auxiliaris (army cutworm)	Estigmene acrea (salt-marsh caterpillar)	Faronta diffusa (wheat head armyworm)	Feltia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	H. zea (bollworm, corn earworm, tomato fruitworm)	Loxostege commixtalis (alfalfa webworm)	Loxostege similalis (garden webworm)	Loxostege sticticalis (beet webworm)	Manduca quinquemaculata (tomato hornworm)	Manduca sexta (tobacco hornworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Prodenia ornithogalli (yellow-striped armyworm)	Pseudaletia unipuncta (armyworm)	Spodoptera exigua (beet armyworm)	Spodoptera frugiperda (fall armyworm)	Trichoplusia ni (cabbage looper)	Crops
FLORIDA																								
Gainesville 10/7-10			BL	7			1		25	1	6							1	6	4	29	8	1	
Monticello 10/3-9			2BL	283						21	47				1	1		56	50	78	5	29	56	
KANSAS																								
Colby 10/8			BL	2		39		3			11							8				1		
Hugoton 10/6			BL	8		37		2			11							4		2				
MISSISSIPPI																								
Stoneville 10/5-11	45-81	2.0	2BL	11					49	5	471					1		1	49	52	62	21	2	
MISSOURI																								
Fair Grove 10/3-9											11						1		4	6		56		
OHIO																								
Wooster 9/31-10/6				1				1			7							2		22		1		
TEXAS																								
Brownsville 10/5-11	72-93	0.72	2BL	27					27						1	2		5	6	10		23		
Waco 10/5-11			BL	11					157	15	172							97	19	135	57	4	28	

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Part XII

Additional copies of Parts I through XII of this bibliography are available from Survey and Detection Operations.

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Prepared in Plant Pest Control
Division

U.S. Dept. Agr.
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